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## NOTICE OF ALLOWANCE AND FEE(S) DUE

28932

7590

09/22/2010

PHIL KONGTCHEU  
PFK TECHNOLOGIES  
P.O. Box 457  
NEW YORK, NY 10108

EXAMINER

CHANDLER, SARA M

ART UNIT

PAPER NUMBER

3693

DATE MAILED: 09/22/2010

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,823	09/14/2005	Phil Kongtcheu		9878

TITLE OF INVENTION: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS TO FACILITATE THE FORMATION AND TRADING  
OF DERIVATIVES CONTRACTS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	12/22/2010

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. **PROSECUTION ON THE MERITS IS CLOSED.** THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN **THREE MONTHS** FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. **THIS STATUTORY PERIOD CANNOT BE EXTENDED.** SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER:** Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

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28932 7590 09/22/2010  
**PHIL KONGTCHEU**  
**PFK TECHNOLOGIES**  
**P.O. Box 457**  
**NEW YORK, NY 10108**

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/518,823 09/14/2005

Phil Kongtcheu

9878

**TITLE OF INVENTION: METHODS, SYSTEMS AND COMPUTER PROGRAM PRODUCTS TO FACILITATE THE FORMATION AND TRADING OF DERIVATIVES CONTRACTS**

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$755	\$300	\$0	\$1055	12/22/2010

EXAMINER	ART UNIT	CLASS-SUBCLASS
CHANDLER, SARAH M	3693	705-03600R

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

- ☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a **Customer Number is required.**

2. For printing on the patent front page, list

- (1) the names of up to 3 registered patent attorneys or agents OR, alternatively, 1 \_\_\_\_\_  
(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. 2 \_\_\_\_\_  
3 \_\_\_\_\_

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY AND STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee  
☐ Publication Fee (No small entity discount permitted)  
☐ Advance Order - # of Copies \_\_\_\_\_

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- ☐ A check is enclosed.  
☐ Payment by credit card. Form PTO-2038 is attached.  
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number \_\_\_\_\_ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

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EXAMINER

CHANDLER, SARA M

ART UNIT

PAPER NUMBER

3693

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## Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 331 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 331 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

**Notice of Allowability****Application No.**

10/518,823

**Examiner**

SARA CHANDLER

**Applicant(s)**

KONGTCHEU, PHIL

**Art Unit**

3693

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/10/10.
2. ☒ The allowed claim(s) is/are 292-309.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of the:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.  
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached  
1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.  
(b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.  
**Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).**
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_.

## **DETAILED ACTION**

### ***Response to Amendment***

This Office Action is responsive to Applicant's arguments and request for reconsideration of application 10/518,823 (04/22/08) filed on 08/10/10.

### ***Allowable Subject Matter***

**Claims 292-309** are allowed, subject to the examiner's amendment below.

Authorization for this examiner's amendment was given in a telephone interview with pro se applicant Phil Kongtcheu, Monday, August 30, 2010

## **EXAMINER'S AMENDMENT**

The application has been amended as follows: In the specification, please replace the Title and Abstract with the amendments noted below. Please cancel claims 274-291. Please add new claims 292 - 309.

### **Title**

Methods, systems and computer program products to facilitate the pricing, risk management and trading of derivatives contracts.

### **Abstract**

This invention relates to methods, systems and computer program products to facilitate the pricing trading and risk management of derivatives contracts on one or more underlying via the introduction of Basis instrument Contracts (BICs). Such pricing trading and risk management may be done in organized exchanges or in over-the-counter (OTC) markets.

Claim 292 (New) A method for yielding a premium payment amount of a derivative contract along a multi-period timeline comprising:

a) receiving, via a first input device linked to a computer processor, a request from a user for a premium payment amount of a derivative contract, said derivative contract having a description comprising, on the multi-period timeline, a contract agreement time, a premium payment time and a payout payment time and, said description further comprising a payout payment amount described as a function of realized values of specified underlying(s) or parameters between the premium payment time and the payout payment time;

b) receiving, via a second input device linked to the computer processor, a premium payment amount for each marginal unit of basis instruments contracts (BICs) having the same payout payment time as the derivative contract, each said marginal unit of BICs having the same premium payment time, said premium payment time being a time that precedes the payout payment time of the derivatives contract on the multi-period timeline;

c) decomposing, by the computer processor, the derivative contract into a portfolio of composing BICs, wherein each composing BIC comprises a quantity of marginal units of BICs having the same payout payment time as the derivative contract;

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d) computing, by the computer processor, a premium payment amount for each composing BIC based on a sum of the marginal units of BICs premium payment amounts in the quantity given by the portfolio decomposition;

e) computing, by the computer processor, a premium payment amount of the derivatives contract based on the portfolio of composing BICs having the same payout payment time as the derivatives contract, wherein said premium payment amount of the derivatives contract is computed as a weighted sum of the premium payment amounts of the composing BICs in the portfolio based on the quantities given by the portfolio decomposition,

f) yielding, by the computer processor, the premium payment amount of the derivatives contract for the premium payment time of the marginal units of BICs;

g) repeating steps a), b), c) ,d), e) and f), where the premium payment amount of the derivative contract for the premium payment time of the marginal units of BICs is received by the first input device as a new derivatives contract with an incrementally decreased payout payment time, and wherein said repetition terminates when the premium payment time in step f) coincides with the premium payment time specified by the user in the description for the derivative contract;

h) and transmitting, via an output device linked to the computer processor, the premium payment amount for the derivative contract yielded in step f) when step g) indicates the repetition terminates, to the user who requested the premium payment amount of the derivative contract.

Claim 293 (New) The method of claim 292, where the BICs are supplied in a variety of payout payment formats, including the Options format, the extended Arrow Debreu format and the Fourier format.

Claim 294 (New) The method of claim 292 used in a trading or exchange system, wherein step b) includes receiving a computed marginal premium payment amount for each unit or group of composing BICs obtained by selecting the most competitive price among those quoted by one or more market makers.

Claim 295 (New) The method of claim 294, where the selected most competitive prices are subsequently contracted upon confirmation of a user's intent to trade the original derivatives contract.

Claim 296 (New) The method of claim 292, wherein the premium payment amount for the marginal units of BICs received from the second input device is provided in aggregate or compressed form to reduce complexity or computing time.

Claim 297 (New) The method of claim 292, wherein the premium payment amount transmitted via the output device is increased by an optional service margin.



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Claim 298 (New) A system for yielding a premium payment amount of a derivative contract along a multi-period timeline comprising:

a) a first input device configured to receive a request from a user for a premium payment amount of a derivative contract, said derivative contract having a description comprising, on the multi-period timeline, a contract agreement time, a premium payment time and a payout payment time and, said description further comprising a payout payment amount described as a function of realized values of specified underlying(s) or parameters between the premium payment time and the payout payment time;

b) a second input device configured to receive a premium payment amount for each marginal unit of basis instruments contracts (BICs) having the same payout payment time as the derivative contract, each said marginal unit of BICs having the same premium payment time, said premium payment time being a time that precedes the payout payment time of the derivatives contract on the multi-period timeline;

c) a computer processor linked to the first input device configured to decompose the derivative contract into a portfolio of composing BICs, wherein each composing BIC comprises a quantity of marginal units of BICs having the same payout payment time as the derivative contract;

a computer processor linked to the first input device and the second input device configured to:

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d) compute a premium payment amount for each composing BIC based on a sum of the marginal units of BICs premium payment amounts in the quantity given by the portfolio decomposition;

e) compute a premium payment amount of the derivatives contract based on the portfolio of composing BICs having the same payout payment time as the derivatives contract, wherein said premium payment amount of the derivatives contract is computed as a weighted sum of the premium payment amounts of the composing BICs in the portfolio based on the quantities given by the portfolio decomposition,

f) yield the premium payment amount of the derivatives contract for the premium payment time of the marginal units of BICs;

g) repeat steps a), b), c) ,d), e) and f), where the premium payment amount of the derivative contract for the premium payment time of the marginal units of BICs is received by the first input device as a new derivatives contract with an incrementally decreased payout payment time, and wherein said repetition terminates when the premium payment time in step f) coincides with the premium payment time specified by the user in the description for the derivative contract;

h) and an output device linked to the computer processor configured to transmit the premium payment amount for the derivative contract yielded in step f) when step g) indicates the repetition terminates, to the user who requested the premium payment amount of the derivative contract.

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Claim 299 (New) The system of claim 298, where the BICs are supplied in a variety of payout payment formats, including the Options format, the extended Arrow Debreu format and the Fourier format.

Claim 300 (New) The system of claim 298 used in a trading or exchange system, wherein step b) further configured to ~~includes~~ receiving a computed marginal premium payment amount for each unit or group of composing BICs obtained by selecting the most competitive price among those quoted by one or more market makers.

Claim 301 (New) The system of claim 300, where the selected most competitive prices are subsequently contracted upon confirmation of a user's intent to trade the original derivatives contract.

Claim 302 (New) The system of claim 298, wherein the premium payment amount for the marginal units of BICs received from the second input device is provided in aggregate or compressed form to reduce complexity or computing time.

Claim 303 (New) The system of claim 298, wherein the premium payment amount transmitted via the output device is increased by an optional service margin.

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Claim 304 (New) A computer program product for yielding a premium payment amount of a derivative contract along a multi-period timeline comprising computer readable memory having logic stored therein for execution on a computer, said logic comprising:

a) logic to receive a request from a user for a premium payment amount of a derivative contract, said derivative contract having a description comprising, on the multi-period timeline, a contract agreement time, a premium payment time and a payout payment time and, said description further comprising a payout payment amount described as a function of realized values of specified underlying(s) or parameters between the premium payment time and the payout payment time;

b) logic to receive a premium payment amount for each marginal unit of basis instruments contracts (BICs) having the same payout payment time as the derivative contract, each said marginal unit of BICs having the same premium payment time, said premium payment time being a time that precedes the payout payment time of the derivatives contract on the multi-period timeline;

c) logic to decompose the derivative contract into a portfolio of composing BICs, wherein each composing BIC comprises a quantity of marginal units of BICs having the same payout payment time as the derivative contract;

d) logic to compute a premium payment amount for each composing BIC based on a sum of the marginal units of BICs premium payment amounts in the quantity given by the portfolio decomposition;

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e) logic to compute a premium payment amount of the derivatives contract based on the portfolio of composing BICs having the same payout payment time as the derivatives contract, wherein said premium payment amount of the derivatives contract is computed as a weighted sum of the premium payment amounts of the composing BICs in the portfolio based on the quantities given by the portfolio decomposition,

f) logic to yield the premium payment amount of the derivatives contract for the premium payment time of the marginal units of BICs;

g) logic to repeat steps a), b), c) ,d), e) and f), where the premium payment amount of the derivative contract for the premium payment time of the marginal units of BICs is received by the first input device as a new derivatives contract with an incrementally decreased payout payment time, and wherein said repetition terminates when the premium payment time in step f) coincides with the premium payment time specified by the user in the description for the derivative contract;

h) and logic to transmit the premium payment amount for the derivative contract yielded in step f) when step g) indicates the repetition terminates, to the user who requested the premium payment amount of the derivative contract.

Claim 305 (New) The computer program product of claim 304, where the BICs are supplied in a variety of payout payment formats, including the Options format, the extended Arrow Debreu format and the Fourier format.

Claim 306 (New) The computer program product of claim 304 used in a trading or exchange system, wherein limitation b) further includes logic to receive a computed marginal premium payment amount for each unit or group of composing BICs obtained by selecting the most competitive price among those quoted by one or more market makers.

Claim 307 (New) The computer program product of claim 306, where the selected most competitive prices are subsequently contracted upon confirmation of a user's intent to trade the original derivatives contract.

Claim 308 (New) The computer program product of claim 304, wherein the premium payment amount for the marginal units of BICs received from the second input device is provided in aggregate or compressed form to reduce complexity or computing time.

Claim 309 (New) The computer program product of claim 304, wherein the premium payment amount transmitted via the output device is increased by an optional service margin.

#### ***Reasons for Allowance***

The following is an examiner's statement of reasons for allowance:

Claim 292 is allowable over the prior art because of limitations a), b) and g) recited therein. Particularly relevant in the prior art is the concept of Arrow

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Debreu Security (ADS) which is a type of contingent claim or insurance contract that pays a fixed amount if a particular event occurs or nothing otherwise. Spanning such types of claims over all possible scenarios enables one to replicate and therefore price any contingent claim based on the occurrence of the uncertain event.

The claimed invention distinguishes three rather than two times in the description of a derivatives contract, as recited in limitation a). These times are a contract agreement time, a premium payment time and a payout payment time. In the prior art (ADS), the contract agreement time and the premium payment time are taken to be essentially the same. The distinction here leads to derivatives contracts with notional amounts that are functions of the future realized values of underlyings or parameters between the contract agreement time and the premium payment time.

The description of BICs in the specification and their introduction in limitation b) is relevant to the repetitive process recited in limitation g). That repetitive process enables static replication of derivative contracts using manageable amounts of replicating instruments i.e. BICs. This allows for computational savings when computing the premium payment amounts of derivatives contracts; essentially, the number of computing operations which in an ADS type of replication would have been needed would be growing exponentially with the number of trading periods. The number of BICs practically grows as a polynomial of fairly low order.

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Independent claims 298 and 304 are allowed based on a similar rationale. Dependent claims are allowed based on the same rationale as the claims from which they depend.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SARA CHANDLER whose telephone number is (571)272-1186. The examiner can normally be reached on M-F, 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Kramer can be reached on (571)272-6783. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SMC  
/JAGDISH N PATEL/

Primary Examiner, Art Unit 3693